UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,440	01/14/2005	David Roberts McMurtry	122204	1862

25944 7590 12/06/2006

OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER	
GUADALUPE, YARITZA	

ART UNIT	PAPER NUMBER
2859	

DATE MAILED: 12/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/521,440	MCMURTRY ET AL.	
	Examiner	Art Unit	
	Yaritza Guadalupe McCall	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 21-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 21-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

In response to Request for Continued Examination filed August 21, 2006

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 21, 23 – 26 and 28 - 29 are rejected under 35 U.S.C. 102 (b) as being anticipated by Henshaw et al. (US 6,481,115).

In regards to claim 1, Henshaw et al. discloses a rotary ring (3) for use in a scale reading apparatus (1, 2) comprising a continuous flexible ring (3) having scale markings provided on a surface thereof (See Column 2, lines 7 – 12)., the flexible ring being sufficiently flexible to self retain (Ass suggested from Column 2, lines 21 – 36 and 47 – 48) about a rotary machine part solely by elastic deformation of at least one portion thereof.

With respect to claim 2, Henshaw et al. also discloses a system for mounting a rotary ring (3) for use in scale reading apparatus onto a machine part (6, 7), comprising a rotary ring (3) and co-operating means on said machine part (6), said co-operating means comprising a region of increased diameter (tapered region as shown in Figures 3 and 4).

With regards to claim 21, Henshaw et al. also shows a system wherein the co-operating means are located on the rotary machine part (6) and wherein the region of increased diameter (tapered region) is integral with the machine part (6, 7) as shown in figures 3 and 4.

Regarding claim 23, Henshaw et al. also discloses a system wherein the region of increased diameter comprises an annular protrusion (7).

In regards to claim 24, Henshaw et al. teaches a system wherein the region of increased diameter comprises a tapered surface (See Figures 3 and 4).

With respect to claim 25, Henshaw et al. discloses a system wherein the flexible rotary ring (3) is provided with a tapered surface (See Column 2, lines 23 – 24).

Regarding claim 26, Henshaw et al. also discloses a system wherein at least one of the region of increased diameter (6) and the rotary ring (3) is provided with a tapered surface and form a self locking taper (See Column 2, lines 27 – 28).

In regards to claim 28, Henshaw et al. further discloses a system wherein the region of increased diameter is shaped so that once the flexible rotary ring (3) is fitted over said region of increased diameter, the central region of said rotary ring is substantially parallel with the axis of said machine part (See Figures 3 and 4).

Regarding claim 29, Henshaw et al. also teaches the method of mounting a flexible rotary scale (3) in the form of a continuous ring, onto a part of a machine (6, 7), the method comprising the step of stretching the flexible rotary scale onto the part (See Column 2, lines 27 – 28 and 47 – 48).

In regards to claim 30, Henshaw et al. teaches a method of mounting a flexible rotary scale (3) onto a rotary machine part (6, 7) wherein the rotary machine part has a region of increased diameter (tapered region) and the method includes the step of stretching the flexible rotary ring (3) over the region of increased diameter of said rotary machine part (See Column 2, lines 27 – 28 and 47 – 48).

Regarding claim 31, Henshaw et al. also disclose a method of mounting a flexible rotary scale (3) onto a rotary machine part (6) wherein the region of increased diameter (tapered region) is integral with the rotary machine part (6).

Regarding claim 33, Henshaw et al. also teach a method of mounting a flexible rotary scale (3) onto a rotary machine part (6, 7) wherein the region of increased diameter (6) on said rotary machine part comprises an annular protrusion (7).

With respect to claim 34, Henshaw et al. disclose a method of mounting a flexible rotary scale (3) onto a rotary machine part wherein the region of increased diameter comprises a tapered surface (6).

In regards to claim 35, Henshaw et al. further teach a method of mounting a flexible rotary scale onto a rotary machine part wherein the flexible rotary scale (3) is also provided with a tapered surface (See Column 2, lines 23 - 24).

Regarding claim 36, Henshaw et al. discloses a method of mounting a flexible rotary scale onto a rotary machine part wherein the flexible rotary scale (3) is provided with a tapered surface and forms a self locking taper (See Figures 3 and 4).

With regards to claim 37, Henshaw et al. discloses a method of mounting a flexible rotary scale onto a rotary machine part wherein the region of increased diameter (tapered region 6) in said rotary machine part comprises a ring-shaped member (defined by protrusion 7).

With regards to claim 38, Henshaw et al. also disclose a method of mounting a flexible rotary scale (3) onto a rotary machine part (6, 7) wherein the region of increased diameter (6) of said rotary machine part is shaped so that once the flexible rotary scale is fitted over said region of increased diameter, the central region of said flexible rotary scale is substantially parallel with the axis of said part (See Figure 3).

In regards to claim 39, Henshaw et al. also discloses a system for mounting a continuous flexible rotary ring (3) for use in a scale reading apparatus onto a rotary machine part (6, 7), comprising a flexible rotary ring (3) having scale markings provided on a surface thereof (See Column 2, lines 7 – 10), wherein a tapered surface (5, 6) is provided on both of said rotary machine part (6) and said flexible rotary ring (3), and the taper angle of said tapered surface is sufficient to form a self locking taper.

3. Claims 1, 2, 20 – 21, 23 – 31 and 33 - 39 are rejected under 35 U.S.C. 102 (b) as being anticipated by Ellis (US 4,332,087).

In regards to claim 1, Ellis discloses a rotary ring comprising a continuous flexible ring (21) having scale markings provided on a surface thereof (See Figure 1), the flexible ring being sufficiently flexible to self retain (as suggested from figure 2) about a rotary machine part (25, 26) solely by elastic deformation of at least one portion thereof.

With respect to the intended use : the examiner points out that a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the structural limitations are able to stand alone. See ***In re Hirao*** , 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and ***Kropa v. Robie*** , 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. ***In re Schreiber***, 44 USPQ2d 1429 (Fed. Cir. 1997).

With respect to claim 2, Ellis also discloses a system for mounting a rotary ring (21) for use in scale reading apparatus onto a machine part (25, 26), comprising a rotary ring (21) and cooperating means (23, 34, 35) on said rotary ring (See Figure 2) and on said rotary machine part (32, 33, 41, 42), said cooperating means comprising a region of increased diameter (tapered region on the rotary ring and annular protrusion on the machine part).

In regards to claim 21, Ellis also teaches a system wherein the region of increased diameter on the rotary machine part is integral to said part.

Regarding claim 23, Ellis also discloses a system wherein the region of increased diameter disposed on said rotary machine part comprises an annular protrusion (41, 42).

In regards to claim 24, Ellis teaches a system wherein the region of increased diameter on said rotary ring comprises a tapered surface (See Figure 2).

With respect to claim 25, Ellis discloses a system wherein the flexible rotary ring is provided with a tapered surface.

Regarding claim 26, Ellis also discloses a system wherein at least one of the region of increased diameter and the rotary ring (21) is provided with a tapered surface and forms a self-locking taper.

Regarding claim 27, Ellis further teaches a system wherein the region of increased diameter in said flexible ring comprises a ring-shaped flexible member (21, 23).

In regards to claim 28, Ellis further discloses a system wherein the region of increased diameter in said rotary ring is shaped so that once the flexible rotary ring (21) is fitted over said region of increased diameter on the machine part, the central region of said rotary ring is substantially parallel with the axis of said machine part (See Figure 1).

Regarding claim 29, Ellis also teaches the method of mounting a flexible rotary scale (21) onto a part of a machine (25, 26), the method comprising the step of stretching the flexible rotary scale onto the part (See Column 4, lines 25 – 31).

In regards to claim 30, Ellis teaches a method of mounting a flexible rotary scale (21) onto a rotary machine part (25, 26) wherein the rotary machine part has a region of increased diameter (See groove and groove walls of Ellis) and the method includes the step of stretching the flexible rotary ring (21) over the region of increased diameter of said rotary machine part.

Regarding claim 31, Ellis also discloses a method of mounting a flexible rotary scale (21) onto a rotary machine part wherein the region of increased diameter (groove and groove walls 41, 42) is integral with the rotary machine part.

Regarding claim 33, Ellis also teaches a method of mounting a flexible rotary scale (21) onto a rotary machine part (25, 26) wherein the region of increased diameter on said rotary machine part comprises an annular protrusion (defined by the groove and groove walls 41, 41 as shown in figure 4).

With respect to claim 34, Ellis discloses a method of mounting a flexible rotary scale (21) onto a rotary machine part wherein the region of increased diameter on said flexible rotary scale (21) comprises a tapered surface (See Figure 2).

In regards to claim 35, Ellis further teach a method of mounting a flexible rotary scale onto a rotary machine part wherein the flexible rotary scale (21) is also provided with a tapered surface (See Figure 2).

Regarding claim 36, Ellis discloses a method of mounting a flexible rotary scale onto a rotary machine part wherein the flexible rotary scale (21) is provided with a tapered surface and forms a self locking taper (See Figures 1 and 2).

With regards to claim 37, Ellis discloses a method of mounting a flexible rotary scale onto a rotary machine part wherein the region of increased diameter in said rotary machine part comprises a ring-shaped member (defined by the grooves 32, 33 and groove walls 41, 42).

With regards to claim 38, Ellis also disclose a method of mounting a flexible rotary scale onto a rotary machine part wherein the region of increased diameter of said rotary machine part is shaped so that once the flexible rotary scale is fitted over said region of increased diameter, the central region of said flexible rotary scale is substantially parallel with the axis of said part (See Figure 1)..

In regards to claim 39, Ellis also discloses a system for mounting a flexible rotary ring (21) for use in a scale reading apparatus onto a rotary machine part (25, 26), comprising a flexible rotary ring (21)having scale markings provided on a surface thereof (See Figure 1), wherein a tapered surface (23, 34, 35) is provided on said flexible rotary ring, and the taper angle of said tapered surface is sufficient to form a self locking taper.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 22 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Henshaw et al. (US 6,481,115).

Henshaw et al. discloses a rotary ring as stated in paragraph 2 above.

Henshaw et al. does not disclose the region of increased diameter not being integral with the rotary machine part as stated in claim 22.

Regarding claim 22, Henshaw et al. also discloses a system wherein the cooperating means is located on the rotary machine part, and wherein the region of increased diameter is integral with the machine part. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide the region of increased diameter being not integral to the machine part, since it has been held that forming in one piece an article which has formerly been formed in two pieces and put together or vice versa involves only routine skill in the art. ***Howard v. Detroit Stove Works***, 150 U.S. 164 (1893).

Response to Arguments

6. Applicant's arguments filed July 20, 2006 have been fully considered but they are not persuasive.

Applicant arguments regarding the Ellis reference not teaching a "continuous flexible ring that is sufficiently flexible to self retain by elastic deformation" is not persuasive. It is pointed out that "continuous" is defined as " to hold together, uninterrupted extension in space, time or sequence; being of immediate connection; attached together in repeated units". By these definitions, a chain belt, for example, comprised of multiple loops/links attached together would create a "continuous" belt. Similarly, the flexible ring (21) disclosed by Ellis, once connected as shown in Figures 1 – 2, results in a "continuous flexible ring", since it configures to a closed loop that is uninterrupted at the particular time the connection is being made when mounted as shown in figures 1 and 2. In regards to the ring not being "self retained", this argument is not persuasive because once the ends of the belt are closed and attached to create the loop, this will function as the self retaining aspect, by providing the ring the tension needed to stay around the rotary parts (25, 26), until an external force is applied and the ends of the ring are separated. Therefore, when giving the broadest, yet reasonable, interpretation to the claimed subject matter, the structure shown by Ellis clearly fulfills the requirements of a continuous flexible ring sufficiently flexible to self retain by elastic deformation, the instant the ends of the ring are attached as shown in Figures 1 and 2.

In regards to the Henshaw et al. reference, the arguments presented above with regards to the Ellis reference, are considered relevant and repeated herein. The rotary ring (3) shown by Henshaw et al. is clearly a one-piece ring having a tapered inner circumference that is "easily pull/pushed along the shaft (6) until a good fit is obtained" (Col.2, lines 27-28) and "because it is thin and flexible" (Col.2, lines 47-48), therefore, fulfilling the requirement of a "continuous flexible ring that is sufficiently flexible to self retain by elastic deformation". The use of mounting screws (8), as recited in the specification, is an optional compensation for eccentricity when concentricity is not desired (Col.2, lines 37 – 46), thus, not affecting the continuity or self retention capabilities of the rotary ring (3) alone.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references are considered of relevance to the present application.

a. Muir (US Pub. No. 2006/0168837)

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yaritza Guadalupe McCall whose telephone number is (571)272 -2244. The examiner can normally be reached on 8:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego F.F. Gutierrez can be reached on (571) 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YGM
December 4, 2006
Art Unit 2859

YARITZA GUADALUPE-MCCALL
PRIMARY EXAMINER